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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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|-----------------|-------------|----------------------|---------------------|------------------|

10/670,064

09/23/2003

Michael L. Case

42P17673

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09/28/2007

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EXAMINER

LUONG, ALAN H

ART UNIT

PAPER NUMBER

2609

MAIL DATE

DELIVERY MODE

09/28/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/670,064

Applicant(s)

CASE, MICHAEL L.

Examiner

ALAN LUONG

Art Unit

2609

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on 23 September 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☐ Claim(s) 1-23 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 9/25/2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 7/14/2006 and 1/10/2005.
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- ☐ Notice of Informal Patent Application
- ☐ Other: _____.

DETAILED ACTION

Specification

1. The disclosure is objected to because of the following informalities:
 - a.) At page 7, para.[0016] lines (1-2); " FM radio tuner 19" and " AM radio tuner" are believed to be a mistyping of " FM radio tuner 17" and " AM tuner tuner 19" in Fig. 1
 - b.) At page 8, para.[0017] line 1; " DBS" is believed to be a mistyping of " SAT" of 21 in Fig. 1.
 - c.) At page 18, para.[0043] line 3, " keyboard" is believed to be a misspelling of "wireless keyboard " is present "145 of Fig. 4"

Appropriate correction is required.

Drawings

1. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description:
 - a.) "22" are present in Fig.1 but not in the disclosure.
 - b.) "IO" (75 of Fig. 3) is believed to be a mistyping of "SiO" in page 15, para.[0036] line 4
 - c.) "83" is present in Fig.3 but not in the disclosure.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted

Art Unit: 2609

after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims **1-4, 8-10 and 13-15** are rejected under 35 U.S.C. 102(b) as being anticipated by **US Patent No 6,334,217 (US'217) to Kim**.

Regarding to claim 1: Kim discloses an apparatus comprising a tuner (102 of Fig.1) to receive " a digital TV broadcasting signal through an antenna " as modulated video signals (col.2 lines 1-2), the tuner having an external control interface (Fig.1; bus 126) to receive commands in a first protocol ("set the first tuner as main tuner and a second tuner as a sub tuner" see col.2, lines 60 –63) from an external agent ("key input part" block 122 of Fig.1 and col.2 lines 36-39).

a microprocessor 118 is coupled to key input part 122, TS decoder 108, channel decoder 106, IF module 104 and Tuner 102 (see Fig. 1) to receive external

Art Unit: 2609

tuner commands to control the first IF module, channel decoder and TS decoder (col.2 lines 64-66) in a second protocol (select the channel to operate external interface device as IF module, channel decoder and TS decoder...), to convert the external commands from the second protocol to the first protocol (see col.2 lines 3-12), and to transmit the converted external commands to the tuner through video/audio switch output (124 of Fig. 1 and col. 2 lines 25-35).

Regarding to claim 2. Kim also discloses that the tuner is set the current view channel at RF modulated signal in the first protocol and wherein the microcontroller receives the command responses, converts RF modulated signal down to baseband signals through IF module and channel decoders and transport stream TS decoder will separates the data bit stream into video and audio signals and transmits the converted command responses to an audio/video switch (or multiplexer in multi- tuners) wherein is controlled by microprocessor. (see col.2 line 59 to col.3 line 14)

Regarding to claim 3: In the apparatus of Kim, wherein a second tuner to receive modulated video signal (col.2 lines 13-14) , the second tuner having a key input part (122 of Fig.1); control line bus 126 connecting 2nd tuner 110 and microprocessor 118 (Fig. 1) to determine a predicted channel at sub tuner or second tuner (col.3 lines 16-18), and wherein the microcontroller set a second tuner as sub-tuner if the current view channel at main tuner), converts them to the third protocol (set the main tuner to the sub tuner and set the sub tuner to main tuner step 204 and 224 fig. 2B), and transmits them to the second tuner in this case no conversion at IF module, channel decoder and TS decoder; the predicted channel will be immediately viewed

Art Unit: 2609

(col.3 line 59 to col. 4 line 11).

Regarding to claim 4: Kim further discloses that, the tuner also comprises an antenna as tuner input port wherein the tuner receives the RF broadcast signals input (100 of Fig. 1) and a video/audio switches (124 of Fig.1) or multiplexers in multi-tuners application wherein are controlled by microprocessor as the output of tuner;(col.2 lines 25-30) to communicate data and control signals in the first protocol to external devices and wherein the microcontroller is coupled to the input/output interface (Fig.1 block 124, block 120 and 122 and col.2 lines 50-54) to convert data and control signals between the first protocol and the second protocol .

Regarding to claim 8: Kim also teaches a method comprising:

receiving at a microcontroller from an external agent commands in a second protocol for a tuner; (Fig.2A, 202 and col.2 lines 59-66)

converting the external tuner commands from the second protocol to a first protocol (Fig. 2A, steps 204, 206 and col.3 lines 2-11); and

transmitting the commands to an external control interface of the tuner (PCI bus 126 of Fig.1) in the first protocol.(Fig. 2A, step 208, 210, 212 and col.3 lines11-15).

Regarding to claim 9: In the method of Kim, further comprising:

receiving command responses in the first protocol at the microcontroller from the tuner; (Fig.2A, step 200 algorithm and col.3 lines 39-49);

converting the received command response to the second protocol (Fig.2B steps 218 and col.3 lines 16--22); and

Art Unit: 2609

transmitting the converted command responses to the external agent (Fig. 2B steps 220, 222, 224 and col.3 lines 22-49).

Regarding to claim 10: Kim further teaches that:

receiving at the microcontroller from an external agent commands in the second protocol for a second tuner (Fig. 2B step 216, 218 and col.3 lines 50-60) ;

converting the second tuner external commands to a third protocol (a predicted channel is selected at second tuner, see Fig. 2B step 216, 218) and consider the second tuner, IF module, channel decoder and TS decoder are selected for executive command of microprocessor(col.2 line 62 to col. 3 line 14) and

transmitting the third protocol commands to the second tuner.(user will watch the changed channel on display by second tuner wherein is selected as main tuner by microprocessor; see Fig. 2B step 220, 222, 224 and col.3 line 61 to col.4 line 11).

Regarding to claim 13: With respect to the article claim 13, as discussed above since the apparatus disclosed by Kim anticipated every structural element and its function required by method claim 8 and since this article in claim 13 merely repeats the same method of claim 8, claim 13 must also be anticipated by Kim. (col.2 lines 59-66), (col.3 lines 2-11) and (col.3 lines 11-15).

Regarding to claim 14: With respect to the article claim 14, as discussed above since the apparatus disclosed by Kim anticipated every structural element and its function required by method claim 9 and since this article in claim 14 merely repeats the same method of claim 9, claim 14 must also be anticipated by Kim. (col.3 lines 39-49), (col.3 lines 16-22) and (col.3 lines 22-49).

Art Unit: 2609

Regarding to claim 15: With respect to the article claim 15, as discussed above since the apparatus disclosed by Kim anticipated every structural element and its function required by method claim 10 and since this article in claim 15 merely repeats the same method of claim 10, claim 15 must also be anticipated by Kim. (col.3 lines 50-60), (col.2 line 62 to col. 3 line 14) and (col.3 line 61 to col.4 line 11).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims **5, 7, 12 and 17** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Kim** in view of **US Publication No 2003/0194968 (US'968)** to **Young**.

Regarding to claim 5: Kim teaches the apparatus as claim 1, but fails to disclose a system processor coupled to the microprocessor to generate the commands in the first protocol to control the tuner.

Young teaches the media server (110 of Fig. 2a) coupled to the microprocessor (see Fig. 2a; block 210 couples to CPU 200, Memory 201, MPEG-2 /decoder graphics 202... and para[0048] lines (1-5)) to generate the commands in the first protocol to control the tuner.(110, 140, 150, 151 of Fig. 1 and para.[0056], [0067] lines (1-7) and [0068]). Therefore, it would have been obvious to a person having an ordinary skill in

Art Unit: 2609

the art at the time of the invention was made to modify a graphic controller wherein couples to the microprocessor of Kim's apparatus, in order to design a media center in the entertainment system.

Regarding to claim 7: The same disclosure of apparatus of Claim 1, Kim discloses the TS decoder detects a packet identification (PID) supply to the new channel and a start position of an intra frame (I) when channel is changed (see col. 1 lines 24-27), but fails to disclose an instruction stack specific for the tuner.

Young further teaches an instruction stack (as "stream using RTP/RTSP protocol"...specific for the tuner, see para.[0074] lines 1-6 and Fig. 2b block 252, Fig.6c block 251) and wherein the microcontroller converts the external tuner commands by applying instructions from the tuner-specific instruction stack (para.[0073]). Therefore, it would have been obvious to a person having an ordinary skill in the art at the time of the invention was made to modify instruction stack in special format as taught by Young; in order to control a specific tuner command from microprocessor.

Regarding to claim 12 and 17: With respect to the method claim 12 and 17, as discussed above since the apparatus disclosed by Kim anticipated every structural element and its function required by apparatus claim 7 in view of Young and since this method in claim 12 and 17 merely repeat the limitation of claim 7, claim 12 and 17 are rendered obvious by Kim (US'217 col.1 lines 24-27) in view of Young (US'968 para.[0073], [0074] and Fig. 2b and 6c).

Art Unit: 2609

6. Claims **6, 11 and 16** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Kim** in view of **US Patent No 6,772,434 (US'434) to Godwin**

Regarding to claim 6: Kim teaches the channel decoder converts the baseband into a data bit stream under control by microprocessor (col.2 lines 7-12) and at microprocessor converts the external tuner commands by applying the commands in the second protocol (col.2 lines 25-31), but fails to disclose a look-up table for the tuner.

Godwin teaches a data stream and a data packet as a look-up table (US'434 Fig. 3A shows a data stream and Fig.3B shows a data package, see col.5 lines 13-52) for the tuner (col. 4 line 61 to col.5 line 5). Therefore, it would have been obvious to a person having an ordinary skill in the art at the time of the invention was made to modify a data stream and a data packet for tuner as Godwin's disclosure; in Kim's apparatus; in order to determine the next channel for selected tuner from user command.

Regarding to claim 11 and 16: With respect to the method claim 11 and 16, as discussed above since the apparatus disclosed by Kim anticipated every structural element and its function required by apparatus claim 6 in view of Godwin and since this method in claim 11 and 16 merely repeat the limitation of claim 6, claim 11 and 16 are rendered obvious by Kim (US'217 col.2 lines 7-12 and lines 25-31) in view of Godwin (US'434 col. 4 line 61 to col.5 line 5 and Fig. 3A, 3B)

7. Claims **18-23** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Kim** in view of **US Patent No. 6,721,832 (US'832) to Ishibashi**

Regarding to claim 18: Kim teaches an apparatus comprising all structural elements and their function in claim 1 above, but fails to disclose a system processor in a video tuner.

Ishibashi teaches a system processor (a media processor 16 of Fig. 1 coupled to the CPU 11 through CPU interface 14, Tuner 20 through CAS module 18 and PCMCIA 19) to receive user commands and to control at least one tuner (col. 4 lines 7-27).

Therefore, it would have been obvious to a person having an ordinary skill in the art at the time of the invention was made to modify a media processor as a system processor wherein couples to above external agents as taught by Ishibashi, in Kim's apparatus, in order to expand the tuner module into the data processing system.

Regarding to claim 19: Kim also teaches the apparatus in 18; but fails to teach the microcontroller transmits the converted command response to the system controller.

Ishibashi teaches the microcontroller transmits the converted command response to the media processor after converting the second protocol (col. 6 lines 33-61). Therefore, it would have been obvious to a person having an ordinary skill in the art at the time of the invention was made to modify transmitting the converted command response to the media processor as taught by Ishibashi, in Kim's apparatus, in order to combine the data process between the CPU, the media processor and the tuner module through PCI bus in the data processing system.

Regarding to claim 20: Kim teaches the apparatus in claim 18 above, but not disclose the microcontroller receives second tuner commands from the system processor for the second tuner in the second protocol,

Ishibashi also teaches that the CPU (11 of Fig. 1) which controls the operation of the entire system; receives the tuner commands from the media processor (16 of Fig.1) for the tuner in the second protocol (col.2 line 60 to col.4. line13). Therefore, it would have been obvious to a person having an ordinary skill in the art at the time of the invention was made to modify the microprocessor receives tuner commands from the media processor for the tuner as taught by Ishibashi, in Kim's apparatus , in order to control process between the CPU , the media processor and the tuner module though PCI bus in the data processing system.

Regarding to claim 21: Kim discloses the tuner of claim 4, but fails to teach a video tuner wherein has an input/output interface to communicate data and control signals to external devices and wherein the microcontroller is coupled to the input/output interface to convert data and control signals.

Ishibashi further teaches an input/output interface (I/O controller 22 of Fig. 1) to communicate data and control signals in the first protocol to external devices (col.4 lines 20-27) and wherein the microcontroller CPU (11 of Fig. 1) is coupled to the input/output interface (Fig. 1 CPU 11 is coupled to I/O controllers 22 through PCI bus 200) to convert data and control signals between the first protocol and the second protocol. Therefore, it would have been obvious to a person having an ordinary skill in

Art Unit: 2609

the art at the time of the invention was made to modify the I/O interface to communicate data and control signals to external devices and wherein the microcontroller is coupled to the input/output interface to convert data and control signals as taught by Ishibashi, in Kim's apparatus , in order to combine the plurality of the in/out interface devices with tuner module under control of microcontroller.

Regarding to claim 22: In the tuner of claim 18, Kim discloses wherein the microcontroller converts the tuner commands by applying the commands in the second protocol, but fails to disclose a look-up table for the tuner.

Ishibashi further teaches that a look-up table for the tuner (as "Channel Control register" Fig. 5) wherein the microcontroller converts the tuner commands by applying the commands in the second protocol (col.5 lines 47 to col.6 line 4) to the look-up table. Therefore, it would have been obvious to a person having an ordinary skill in the art at the time of the invention was made to modify a look-up table for tuner as taught by Ishibashi, in Kim's apparatus , in order to determine available channel available for tuner in PCI bus

Regarding to claim 23: Kim discloses the microprocessor converts external tuner commands, except an instruction stack specific for tuner.

Ishibashi also teaches that an instruction stack specific for the tuner (as "Stream Access" in Fig. 6) and wherein the microcontroller converts the external tuner commands by applying instructions from the tuner-specific instruction stack. (col.6 lines 5-30) . Therefore, it would have been obvious to a person having an ordinary skill in the

Art Unit: 2609

art at the time of the invention was made to modify an instruction stack specific for the tuner as taught by Ishibashi, in Kim's apparatus, in order to control handshaking operation between the devices connecting to the PCI bus.

Conclusion

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

US 5,973,748, US 6,118,498, US 6,519,011, US 2004/0102155, US 2004/0189879, US 6,804,824, US 7,225,458 are relevant references that teach the receiving channels through tuners but not disclose the scope of claims in the invention.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to ALAN LUONG whose telephone number is (571) 270-5091. The examiner can normally be reached on Mon.-Thurs., 8:00am-5pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dennis Chow can be reached on (571) 272-7767. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

ALAN LUONG
Examiner

Alan Y. Luong